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EXAMINER	
KRAMSKAYA, MARINA	

ART UNIT	PAPER NUMBER
2858	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/759,456	SHERRARD ET AL.	
	Examiner	Art Unit	
	Marina Kramskaya	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/12/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on 01/17/2003. It is noted, however, that applicant has not filed a certified copy of the 2,416,623 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4, 5, 7, 8, 11, 12, 20, 21, & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney et al., US 6,588,272, in view of Lazure, US 5,076,101.

As per Claim 1, Mulrooney discloses a linear position sensor, comprising:

- a rigid linear guide **252** having a first end, a second end;

- a follower **260** having a central aperture (see FIG. 13, the top view), the follower being positioned with the linear guide passing through the central aperture (see FIG. 12, the vertical view), the follower being of a material that is one of a magnet or subject to influence by a magnet (magnet **48** positioned inside the follower, see FIG. 2);
- a TDR instrument (transmitter **43**) at one end of the linear guide (top), the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower (embodiment of FIG. 12-13; column 5, lines 9-11).

Mulrooney does not disclose at least one magnet adapted for mounting on an object, the follower being magnetically influenced through one of attraction or repulsion to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the object. Mulrooney does not explicitly disclose the linear guide being made of a conductive material.

Lazure discloses a linear position sensor wherein one magnet **13** is adapted for mounting on an object **10**, the follower **20** being magnetically influenced through one of attraction or repulsion to the at least one magnet **13** to such an extent that the follower follows the movement of the at least one magnet (follower **20** follows float **10**), whereby

the linear positioning of the follower **20** provides an accurate indication of the linear positioning (as detected by **32**) of the at least one magnet **13** mounted to the object **10**.

However, it would be obvious to a person of ordinary skill in the art to have a conducive linear guide, in the sensor system of Mulrooney, because the guide is a probe, which must be conductive in order to carry a signal.

It would be obvious to a person of ordinary skill in the art to adapt a magnet on an object which the follower would follow the movement of, as taught by Lazure, in the linear position sensor of Mulrooney, in order to enable the follower to follow the position of the float on the surface of the water for detecting the linear position of the float to detect the depth of the water.

As per Claim 4, Mulrooney, as modified, discloses the linear position sensor as applied to Claim 1 above.

Mulrooney does not disclose the follower as a magnet that is magnetically repulsed by the at least one magnet.

Lazure discloses the follower as a magnet (**20** contains magnet **21**) that is magnetically repulsed by the at least one magnet **13** (column 4, lines 16-18).

Therefore, it would have been obvious to a person of ordinary skill in the art to have the follower be a magnet that is magnetically repulsed by the at least one magnet, as taught by Lazure, in the linear position sensor of Mulrooney, in order to enable the follower to follow the position of the float by maintaining a central equilibrium while detecting the linear position of the float to detect the depth of the water.

As per Claim 5, Mulrooney further discloses the linear position sensor, wherein the follower is annular ("donut shaped" in column 5, lines 7-8 and FIG 12-13).

As per Claim 7, Mulrooney further discloses the linear position sensor, wherein the linear guide is in a vertical orientation (see FIG 12, wherein guide **252** is vertical).

As per Claim 8, Mulrooney further discloses the linear position sensor, wherein a protective tubular housing **26** overlies the linear guide with follower, the tubular housing having an interior bore sized to allow the follower unfettered axial movement of along the linear guide (see FIG 12-13).

As per Claim 11, Mulrooney, as modified, discloses the linear position sensor as applied to Claim 1 above.

Mulrooney does not disclose the object that acts as a fluid level indicator floating on top of one of a liquid or a liquefied gas in a fluid storage tank.

Lazure discloses the object **10** that acts as a fluid level indicator floating on top of a liquid (top of liquid indicated by solid line in tank) in a fluid storage tank **1**.

Therefore, it would have been obvious to a person of ordinary skill in the art to have a float that acts as a fluid level indicator in a tank, as taught by Lazure, in the linear position sensor of Mulrooney, in order to have an indicator directly in the tank,

instead of on the outside (as in Mulrooney's tank **22**) for a more accurate fluid level indication.

As per Claim 12, Mulrooney discloses the linear position sensor as applied to Claim 8 above.

Mulrooney does not disclose the object that is a float, which surrounds the tubular housing.

Lazure discloses the object that is a float **10**, which surrounds the tubular housing **6** (see side cross-section FIG 2 and top cross-section FIG 3).

Therefore, it would have been obvious to a person of ordinary skill in the art to have a float that surrounds the tubular housing, as taught by Lazure, in the linear position sensor of Mulrooney, in order to have a precise position for the tube where the follower will be at central equilibrium (column 4, lines 18-22).

As per Claim 20, Mulrooney discloses a linear position sensor, comprising:

- a rigid linear guide **252** having a first end, a second end;
- a magnetic (magnet **48** positioned inside the follower) follower **260** having a central aperture (see FIG 13, the top cross-section view), the follower being positioned with the linear guide passing through the central aperture (see FIG 12-13);
- a TDR instrument **43** at one end of the linear guide (top end), the TDR instrument being adapted to send a TDR signal parallel to the linear guide which

is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower (embodiment of FIG. 12-13; column 5, lines 9-11).

Mulrooney does not disclose a magnet adapted for mounting on an object, the magnet having opposed magnetic poles, the poles of the follower and the magnet being respectively oriented so that the follower is magnetically repelled by the magnet to such an extent that the follower follows the movement of the magnet, whereby the linear positioning o/ the follower provides an accurate indication of the linear positioning of the magnet mounted to the object. Mulrooney does not explicitly disclose the guide being made of a conductive material or the magnetic follower having opposed poles.

Lazure discloses the magnetic follower having opposed poles (**21**: N & S, see FIG 4). Lazure further discloses a magnet **13** adapted for mounting on an object **10**, the magnet having opposed magnetic poles (**13**: N & S, see FIG 4), the poles of the follower and the magnet being respectively oriented so that the follower is magnetically repelled by the magnet to such an extent that the follower follows the movement of the magnet (see FIG 4), whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the magnet mounted to the object (column 4, lines 15-18 & 25-28).

However, it would be obvious to a person of ordinary skill in the art to have a conducive linear guide, in the sensor system of Mulrooney, because the guide is a probe, which must be conductive in order to carry a signal.

Therefore, it would have been obvious to a person of ordinary skill in the art to include an object with a magnet with opposing poles, where the poles of the magnetic follower and the poles of the magnet mounted on the object are oriented in a manner so that the follower is repelled, as taught by Lazure, in the linear position sensor of Mulrooney, in order to keep the follower at central equilibrium in the tubular housing (column 4, lines 15-22).

As per Claim 21, Mulrooney discloses the linear position sensor as applied to Claim 20 above, and further discloses the follower to be annular (see FIG. 13, top cross-section view).

As per Claim 23, Mulrooney discloses the linear position sensor as applied to Claim 20 above, and further discloses that the linear guide is in a vertical orientation (see FIG 12).

4. Claims 2-3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney in view of Lazure as applied to claim 1 above, and further in view of Rapp, US 4,337,656.

As per Claim 2, Mulrooney, as modified, discloses the linear position sensor as applied to Claim 1.

Mulrooney does not disclose the follower to be of a material that is subject to influence by a magnet and the follower being magnetically attracted to the at least one magnet.

Rapp discloses the follower to be of a material that is subject to influence by a magnet and the follower **20** being magnetically attracted to the at least one magnet **14** (column 4, line 66 - column 5, line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art to have the follower be of a material that is subject to influence by a magnet and the follower being magnetically attracted to the at least one magnet, as taught by Rapp, in the linear position sensor of Mulrooney, in order to enable the follower to follow the position of the float on the surface of the water for detecting the linear position of the float to detect the depth of the water.

As per Claim 3, Mulrooney, as modified discloses the linear position sensor as applied to Claim 1 above.

Mulrooney does not disclose the follower to be a magnet and to be magnetically attracted to the at least one magnet.

Rapp discloses the follower as a magnet **20** that is magnetically attracted to the at least one magnet **14** (column 4, line 66 - column 5, line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art to have the follower be a magnet and to be magnetically attracted to the at least one magnet, as taught by Rapp, in the linear position sensor of Mulrooney, in order to

enable the follower to follow the position of the float on the surface of the water for detecting the linear position of the float to detect the depth of the water.

As per Claim 9, Mulrooney discloses the linear position sensor as applied to Claim 8 above.

Mulrooney does not disclose the housing that is made from a conductive material.

Rapp discloses the housing that is made from a conductive material (column 5, lines 33-34).

Therefore, it would have been obvious to a person of ordinary skill in the art to include a housing that is made from a conductive material, as taught by Rapp, in the linear position sensor of Mulrooney, in order to keep a constant temperature inside the tube (column 5, lines 36-37).

5. Claims 6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney in view of Lazure as applied to claim 1 above, and further in view of Siegele, US 5,607,002.

Mulrooney in view of Lazure disclose the linear position sensor as applied to Claims 1 and 20 above.

Mulrooney, as modified, does not disclose the linear guide as one of a metal rod or a tensioned metal cable.

Siegele discloses a linear position sensor where the linear guide 28 is one of a metal rod (column 13, lines 32-34).

Therefore, it would have been obvious to a person of ordinary skill in the art to have the linear guide be a metal rod, as taught by Siegele, in the position sensor of Mulrooney, in order to allow the follower to interact with the linear guide.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney in view of Lazure as applied to claim 1 above, and further in view of Neuhaus et al., US 6,691,570.

Mulrooney and Lazure disclose the linear position sensor as applied to Claim 1 above.

Mulrooney, as modified, does not disclose a liquid level indicator object mounted to an exterior of a liquid storage tank.

Neuhaus discloses a linear position sensor wherein the object **2** is a liquid level indicator mounted to an exterior of a tank **6** (see FIG 3).

Therefore, it would have been obvious to a person of ordinary skill in the art to mount the liquid level indicator object on the exterior of the tank, as taught by Neuhaus, in the linear position sensor of Mulrooney, in order to measure the liquid level of a tank when the inside of the tank is not accessible.

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney in view of Rapp.

As per Claim 13, Mulrooney discloses a linear position sensor, comprising:

- a rigid linear guide **252** having a first end, a second end;
- a follower having a central aperture (see FIG 13), the follower being positioned with the linear guide passing through the central aperture, the follower being of a material that is attracted to a magnet (having magnet **48** inside, as show in FIG 2);
- a TDR instrument (transmitter **43**) at one end of the linear guide (top end), the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower (embodiment of FIG 12-13; column 5, lines 9-11); and
- a fluid impervious protective tubular housing **26** overlying the linear guide with follower (FIG 12-13), the tubular housing having an interior bore sized to allow the follower unfettered axial movement along the linear guide (see FIG 12-13).

Mulrooney does not disclose:

- a linear guide made of conductive material;
- conductive tubular housing;
- a float having a central aperture, the float being positioned with the tubular housing passing through the central aperture, the float being adapted to float on

liquid and rise and fall along a path defined by the tubular housing, the float having at least one magnet, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the float.

Rapp discloses :

- a conductive tubular housing (column 5, lines 33-34);
- a float **16** having a central aperture (see FIG 1), the float being positioned with the tubular housing **2** passing through the central aperture, the float being adapted to float on liquid and rise and fall along a path defined by the tubular housing **2** (ABS, lines 8-9), the float having at least one magnet **14**, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet (column 4, line 66 - column 5, line 2), whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the float (column 4, line 66 - column 5, line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art to include a float with a central aperture as a water level indicator, where a magnetic follower follows the movement of the float with at least one magnet, as taught by Rapp, in the linear position sensor of Mulrooney, in order to enable the follower to follow the

position of the float on the surface of the water for detecting the linear position of the float to detect the depth of the water.

Further, it would be obvious to a person of ordinary skill in the art to have a conducive linear guide, in the sensor system of Mulrooney, because the guide is a probe, which must be conductive in order to carry a signal.

As per Claim 14, Mulrooney discloses a method of linear position sensing of an object using TDR, comprising the steps of:

- mounting a rigid linear guide **252**, the linear guide having a first end, a second end;
- providing a follower **260** having a central aperture (see FIG 13, the top view) and positioning the follower with the linear guide passing through the central aperture (see FIG 12), the follower being of a material that is attracted to a magnet (magnet **48** positioned inside the follower, see FIG 2);
- positioning a TDR instrument (transmitter **43**) at one end of the linear guide (top end), the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower (embodiment of FIG 12-13, column 5, lines 9-11).

Mulrooney does not disclose:

- the linear guide positioned adjacent and parallel to a path along which an object travels;

- the linear guide being made of a conductive material;
- mounting at least one magnet on the object, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, the linear positioning of the follower providing an accurate indication of the linear positioning of the at least one magnet mounted to the object.

Rapp discloses mounting at least one magnet **14** on the object **16**, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet (column 4, line 66 - column 5, line 2), the linear positioning of the follower providing an accurate indication of the linear positioning of the at least one magnet mounted to the object (column 4, line 66 - column 5, line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art to include a float with a central aperture as a water level indicator, where a magnetic follower follows the movement of the float with at least one magnet, as taught by Rapp, in the linear position sensor of Mulrooney, in order to enable the follower to follow the position of the float on the surface of the water for detecting the linear position of the float to detect the depth of the water.

Further, it would be obvious to a person of ordinary skill in the art to have a conducive linear guide, in the sensor system of Mulrooney, because the guide is a probe, which must be conductive in order to carry a signal.

Further, it would be obvious to a person of ordinary skill in the art to have a the linear guide positioned adjacent and parallel to a path along which an object travels, since the linear guide in Mulrooney is positioned parallel to the tubular housing **26**, and in according with the teachings of Rapp, an object moves along the path of the tubular housing.

8. Claims 15 & 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney et al. in view of Rapp and Siegele et al.

As per Claim 15, Mulrooney discloses a linear position sensor, comprising:

- a rigid linear guide **252** having a first end, a second end, and the linear guide being positioned in a vertical orientation (see FIG 12);
- an annular follower **260** having a central aperture (see FIG 13, the top view), the follower being positioned with the linear guide passing through the central aperture (see FIG 12, the vertical view), the follower being of a material that is attracted to a magnet (magnet **48** positioned inside the follower, see FIG 2), ;
- a TDR instrument (transmitter **43**) at one end of the linear guide (top end), the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower (embodiment of FIG 12-13; column 5, lines 9-11);

- a protective conductive tubular housing **26** overlying the linear guide **252** with follower **260**, the tubular housing having an interior bore sized to allow the follower unfettered axial movement along the linear guide (see FIG 12-13).

Mulrooney does not disclose:

- a linear guide being a metal rod or a tensioned metal cable;
- at least one magnet adapted for mounting on an object, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the object.

Rapp discloses a linear position sensor with at least one magnet **14** adapted for mounting on an object **16**, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet (column 4, line 66 - column 5, line 2), whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the object (column 4, line 66 - column 5, line 2).

Siegele discloses a linear guide being a metal rod **28** (column 13, lines 32-34) or a tensioned metal cable.

Therefore, it would have been obvious to a person of ordinary skill in the art to include a float with a central aperture as a water level indicator, where a magnetic follower follows the movement of the float with at least one magnet, as taught by Rapp, in the linear position sensor of Mulrooney, in order to enable the follower to follow the

position of the float on the surface of the water for detecting the linear position of the float to detect the depth of the water. Further it would have been obvious to a person of ordinary skill in the art to have the linear guide be a metal rod, as taught by Siegele, in the position sensor of Mulrooney, in order to allow the follower to interact with the linear guide.

As per Claim 17, Mulrooney, as modified, discloses the linear position sensor as applied Claim 15 above.

Mulrooney does not disclose the object as a fluid level indicator adapted to float on top of one of a liquid or a liquefied gas.

Rapp discloses the object **16** as a fluid level indicator adapted to float on top of one of a liquid (ABS, lines 8-9).

Therefore, it would have been obvious to a person of ordinary skill in the art to have a float that acts as a fluid level indicator in a tank, as taught by Rapp, in the linear position sensor of Mulrooney, in order to have an indicator directly in the tank, instead of on the outside (as in Mulrooney's tank **22**) for a more accurate fluid level indication.

As per Claim 18, Mulrooney, as modified, discloses the linear position sensor as applied Claim 17 above.

Mulrooney does not disclose the fluid level indicator that surrounds the tubular housing.

Rapp discloses a fluid level indicator **16** that surrounds the tubular housing 2 (see cross-section FIG 1, ABS, line 8-9).

Therefore, it would have been obvious to a person of ordinary skill in the art to include fluid level indicator that surrounds the tubular housing, as taught by Rapp, in the linear position sensor, in order for the tube to guide the vertical movement of the float.

As per Claim 19, Mulrooney discloses the linear position sensor as applied to Claim 15 above, and further discloses the TDR instrument connected to a communications link to allow remote monitoring (column 1, lines 31-32) of the position of the object.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney in view of Rapp and Siegele as applied to claim 15 above, and further in view of Neuhaus.

Mulrooney as modified discloses the linear position sensor as applied to Claim 15 above.

Mulrooney, as modified does not disclose a linear position sensor where the object is a liquid level indicator mounted to an exterior of a tank.

Neuhaus discloses a linear position sensor wherein the object **2** is a liquid level indicator mounted to an exterior of a tank **6** (see FIG 3).

Therefore, it would have been obvious to a person of ordinary skill in the art to mount the liquid level indicator object on the exterior of the tank, as taught by Neuhaus, in the linear position sensor of Mulrooney, in order to measure the liquid level of a tank when the inside of the tank is not accessible.

10. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulrooney in view of Lazure as applied to claim 23 above, and further in view of Dyben et al, US 4,637,254.

Mulrooney and Lazure disclose the linear position sensor as applied to Claim 23 above.

Mulrooney, as modified, does not disclose the follower coated with a low friction coating.

Dyben discloses a linear position sensor, wherein the follower has a low friction coating (column 1, lines 31-38).

Therefore, it would have been obvious to a person of ordinary skill in the art to coat the follower with a low friction coating, as taught by Dyben, in the linear position sensor of Mulrooney, in order to allow ease of movement of the follower with minimum friction.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yashiro et al., US 6,541,758, and Yashiro et al., US 6,703,635, disclose a TDR linear position sensor with a float. Issachar, US 6,028,521, discloses a liquid level sensor with a floating annular magnet. Robinson, US 6,195,013, discloses a magnetic float linear position fluid level sensor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571)272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marina Kramskaya
Examiner
Art Unit 2858

MK

ANJAN DEB
PRIMARY EXAMINER